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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,110	02/28/2002	Hiroyasu Nishida	1217-020321	9550

7590 10/06/2003

Russell D Orkin
700 Koppers Building
436 Seventh Avenue
Pittsburgh, PA 15219-1818

EXAMINER	
DICUS, TAMRA	

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ART UNIT	PAPER NUMBER
1774	

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/070,110	NISHIDA ET AL.	
	Examiner	Art Unit	
	Tamra L. Dicus	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 September 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Cancellation of claims 1-6 is acknowledged. Claims are renumbered, but claim 7 remains pending. See original claim.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Original claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Original claim 7 depends from claim 6 which has been cancelled.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 8-15 are rejected under 35 U.S.C. 102(e) as being anticipated by USPN 6,342,293 to Nakahara et al.

Alumina hydrate particles have at most 0.7 microns, meeting Applicant's range 0.02-0.2 microns (see col. 4, lines 67-68). Nakahara teaches an alumina hydrate as sol particles and an acid-containing water as a medium, and which is characterized in that an alumina hydrate powder obtainable by removing water from the alumina sol, has an average pore radius of at

least 7 nm and a total volume of pores having pore radii of from 1 to 100 nm of from 0.80 to 2.00 cc/g (falling within Applicant's claimed range of particle diameter from 0.02 to .2 microns and total pore volume of 0.5-1.5 ml/g and volume of pores diameter from 15-30 nm ranging from 0.3-1 ml/g). See col. 2, lines 40-55, col. 6, lines 46-58, and col. 7, lines 35-47. Instant claims 8 and 10 are met. Nakahara further teaches an alumina hydrate powder consisting essentially of an acid-containing alumina hydrate having a sol concentration of 0.5 wt % obtained by dispersing the alumina hydrate powder in water, which is from 5 to 70%. (Meeting the Al2O3 concentration of 20% by weight limitation, of instant claim 11-13). See col. 2, lines 40-50 and col. 6, lines 35-40. The alumina hydrate of Nakahara results in the general formula of instant claims 8, 10, 11, and 15. While Nakahara does not teach the absorbance of 2.0 or less or viscosity of 50-2000 cP, because Nakahara teaches the Al2O3 falls within the same concentration range of Applicant, such properties are therefore present and inherent.

Regarding claim 14, Nakahara teaches a coating of the alumina hydrate as described above, is dried and forms an ink-receiving layer at col. 6, lines 25-35, equivalent to a coating liquid. Within the aforesaid citing, Nakahara further teaches the ink receiving layer is on a substrate to produce a recording medium (regarding instant claim 15). See also col. 12, lines 9-20 teaching the coating fluid dried on an ink receiving medium and substrate for a recording medium that provides good ink absorptivity.

Regarding claim 9, at col. 3, line 47 – col. 4, line 8, Nakahara describes the pH in the aggregation treatment is form 7 to 12 (neutralizing step). Nakahara adds an alkali to adjust the pH of the alumina hydrate dispersion to the above range. The alkali to be added, is an alkali metal hydroxide, an alkaline earth metal hydroxide, ammonia, an amine or a quarternary

ammonium hydroxide, or an alkali containing aluminum, such as an alkali metal aluminate, may also be used. The temperature for the aggregation treatment is preferably from 50 to 150 degrees C (meeting Applicant's range from 50 to 105 degrees C). Nakahara explains the higher the temperature, the shorter the time for adequate progress in crystal growth and aggregation of the alumina hydrate particles and the larger the pore size and pore volume become. In Example 1, acetic acid was added to this dispersion. The dispersion forms a powder, and thereby teaches the dispersion was dried (see col. 11, lines 1-25).

3. Claims 8, 10, 11, and 15 are rejected under 35 U.S.C. 103(a) as obvious over EP 0 934 905 to Asaoka et al. in view of USPN 4,371,513 to Sanchez et al.

4. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

5. Asaoka teaches alumina hydrate powder having pore volumes from 0.8-0.70, falling within Applicant's claimed range of particle diameter from 0.02 to .2 microns. Pore radius ranges from 94-112 cc/g and the volume of pores having radii not exceeding 50 Angstrom, is from 0.02-0.11 cc/g (falling within Applicant's claimed range of particle diameter from 0.02 to .2 microns and total pore volume of 0.5-1.5 ml/g and volume of pores diameter from 15-30 nm ranging from 0.3-1 ml/g) in Table 1. The alumina hydrate general formula of instant claims 8, 10, 11, and 15 of Asaoka is at [0025]. Asaoka at [0034] teaches a recording medium produced from a coating liquid comprising the alumina hydrate to form an ink-receiving layer (instant claims 11 and 15).

6. Asaoka does not teach the ammonia and alkali metal included in the production of alumina hydrate or the respective mol ranges. However, Sanchez teaches alumina compositions. Ammonia is added to the alumina particles at col. 5, lines 60-65 for producing spherical alumina particles. See also col. 3, lines 60-65. The ammonia concentration in the aqueous phase may be about 0.5 to 28.4 weight percent at col. 19, lines 14-15. See also col. 17 and col. 18 teaching the ammonia additions and effects for producing spherical particles. It would have been obvious to one of ordinary skill in the art to modify the alumina hydrate of Asaoka to include ammonia to result in the general formula of alumina hydrate because Sanchez teaches reacting ammonia with alumina particles produces spherical particles as cited above. The mol range of ammonia is optimizable because it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

7. Sanchez teaches alumina is combined with an alkali metal at col. 6, lines 39-45. Sanchez teaches the mol ratio of alkali metal to alumina is varied dependent upon the impurity level of the alumina at col. 6, lines 53-68. It would have been obvious to one of ordinary skill in the art to modify the alumina hydrate of Asaoka to include an alkali metal to result in the general formula of alumina hydrate because Sanchez teaches alkali metals are introduced to effect the impurity level of the alumina particles as cited above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is (703) 305-3809. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Tamra L. Dicus
Examiner
Art Unit 1774

September 25, 2003

CYNTHIA H. KELLY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700